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(54) Foldable partition with integral door

(57) A stowable aircraft cabin vertical partition comprising (1) at least three rigid rectangular-shaped panels attached to each other by panel hinges along the horizontal joints between the panels, that permit the partition to hang vertically when in use and to be fan folded along the joints when stowed (2) a partition support to which the partition is attached near or along its top edge, (3) a stowage support which holds the fanfolded partition next to the support for stowage; wherein a portion of the panels form a vertically-hinged cabin access door having a sufficient number of vertical and horizontal hinges to keep the panels of the access door in a planar alignment with each other when the partition is in use, and to be fan folded with the rest of the partition when the partition is stowed.

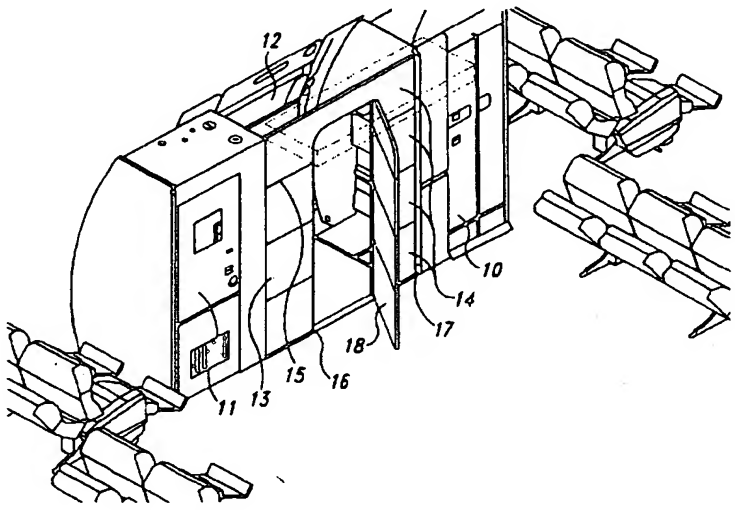

Fig. 1

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be closed and latched, as shown in FIG. 2C.

[0011] The partition support and stowage support are preferably located so that the partition may be stowed at a height of at least 80 inches above the passenger cabin floor, more preferably at least 82 inches, and most preferably at least 84 inches. Likewise, the overall height of the partition is preferably at least as tall as the partition support, although it may be shorter if an open space at the bottom of the partition is acceptable for the application.

[0012] FIG. 3 illustrates a folding partition 31 with a door frame 33 and a lockable hinged cabin access door 32. In this embodiment, the door swings out towards the middle of the cabin, is about the same size as a lavatory door, and is positioned in the middle of the partition. However, any other suitable position and size or type of the door, hinge number, type, and location, or location and type of door opening mechanism or door lock, may be utilized.

[0013] FIG. 4 is a view of the assembly components of one embodiment of the partition of this invention. A storage compartment 41 for the door is shown having a hinged lid 42 which is opened when the partition is to be set up or stowed. At all other times, the lid of the compartment is preferably kept closed. Partition panels 43a-d form the portion of the partition around the door. Partition panels 44a-d form the door. The partition panels are connected by horizontal hinges 45a-i that allow the panels of the partition and door to be fan folded for storage in the compartment. Any suitable type or length of hinge may be used as a horizontal panel hinge or vertical door hinge to permit the partition to be fan-folded for storage and the door in the partition to be utilized. In one embodiment, the horizontal hinges extend the length of the panel and allow the panels to be fan-folded in either direction. In a preferred embodiment, the hinge is made of a flexible polymeric material such as polystyrene, polyethylene, or polypropylene. More preferably, the hinge is a strip of a polyethylene or polypropylene film material having a width in the range of from 3 to 5 inches and a thickness in the range of from 0.0625 to 0.250 inches, that is adhered to either the interior or exterior side of the panels along each joint, with enough space provided between the panels so that each panel may be caused to lie flat against an adjacent panel when the partition is fan-folded along the joints.

[0014] Preferably, the hinges have a tabbed portion that extends beyond the edges of the panel joint by a distance (width) of no greater than the thickness of the panels. Preferably, the tabbed portions have a width of at least 0.5 times the thickness of the panels. When the partition is opened and a tabbed portion is bent in a direction so that it lies flat against the side edge of the partition or partition door, thereby forming an L-shaped portion around a corner of the partition or door, the position of the L-shaped portion against a two-panel joint helps prevent the panel joint from folding during use of the partition, giving it a flatter and neater appearance, as illustrated in FIG. 6. The top of the partition is attached to the storage compartment by hinges 46a-b. Exit signs 47a-b indicate the location of the aircraft exit door when the partition is in the unfolded position.

[0015] FIG. 5 shows an embodiment wherein the hinges at the top of the door have a plurality of safety release pins 51a-b which allow the partition to be quickly removed from in front of the aircraft door in an emergency. When the safety release pins are pulled out of the hinges, the partition will no longer be attached along its top edge. FIG. 5 also shows a hinge assembly having a hinge 52, threaded fasteners 53a-c, and a securing plate 54. This hinge assembly secures the partition to the partition support and provides a means to quickly remove the panel from the aircraft doorway.

[0016] FIGS. 6A-C show one embodiment of a panel hinge with a tabbed portion. The adjacent panels of the partition 61, 62 are connected by a hinge 63 made from an extruded polyethylene material having tabbed portions 64, 65 which extend past the ends of the panels. When the partition is unfolded for use (FIG. 6B) the tabbed portions may be bent around the edge of the panels (FIG. 6C) to help prevent the panel joints from folding during partition use. The tabbed portions preferably have a beveled shape 66, 67 at the panel corners to facilitate their use as a means to lock the panel joint in place.

Claims

1. A stowable aircraft cabin vertical partition comprising (1) at least three rigid rectangular-shaped panels attached to each other by panel hinges along the horizontal joints between the panels, that permit the partition to hang vertically when in use and to be fan folded along the joints when stowed (2) a partition support to which the partition is attached near or along its top edge, (3) a stowage support which holds the fan-folded partition next to the support for stowage; wherein a portion of the panels form a vertically-hinged cabin access door having a sufficient number of vertical and horizontal hinges to keep the panels of the access door in a planar alignment with each other when the partition is in use, and to be fan folded with the rest of the partition when the partition is stowed.

2. The partition of claim 1 wherein the partition is positioned so that it encloses the space adjacent to an aircraft exterior door and between partitions or modules located fore and aft of the exterior door.

3. The partition of claim 1 wherein the rigid panels are made of lightweight sandwich composite material.

4. The partition of claim 1 wherein the partition hinges are an extruded flexible material adhered to one

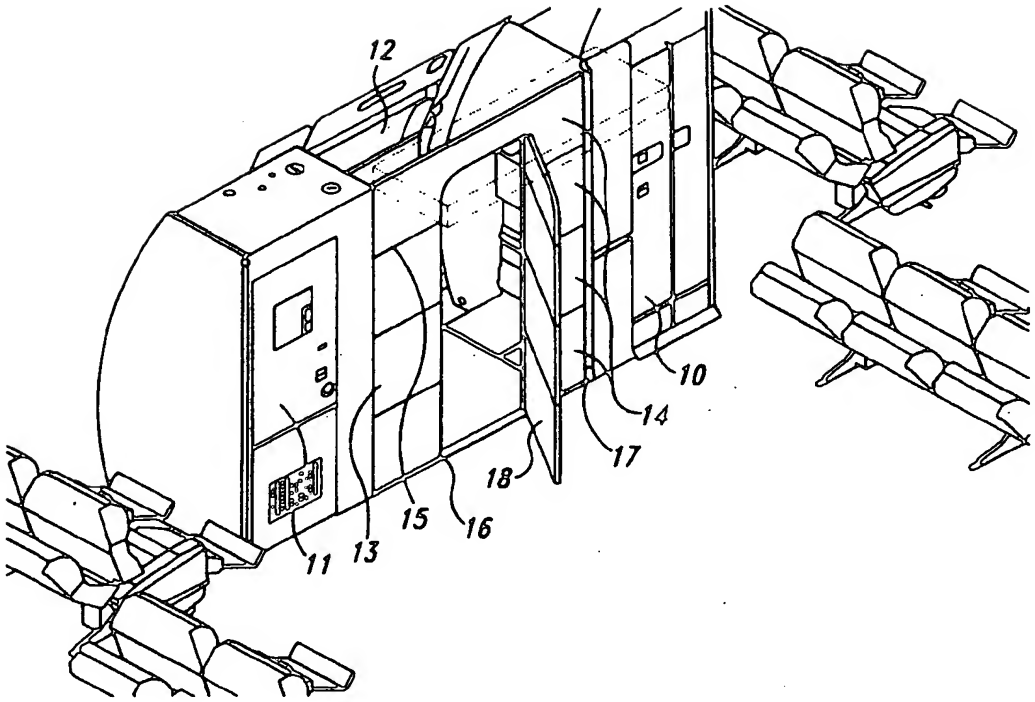

Fig. 1

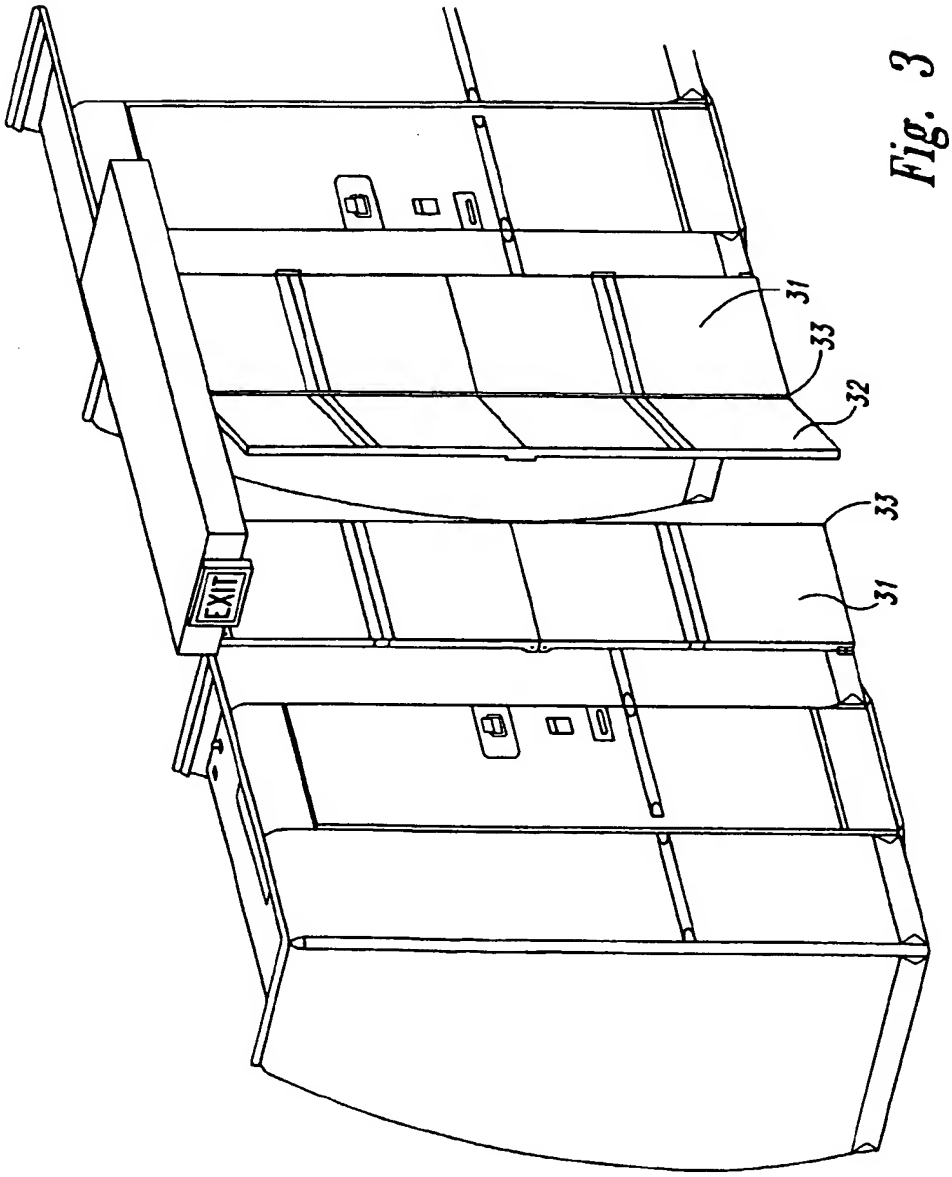

Fig. 3

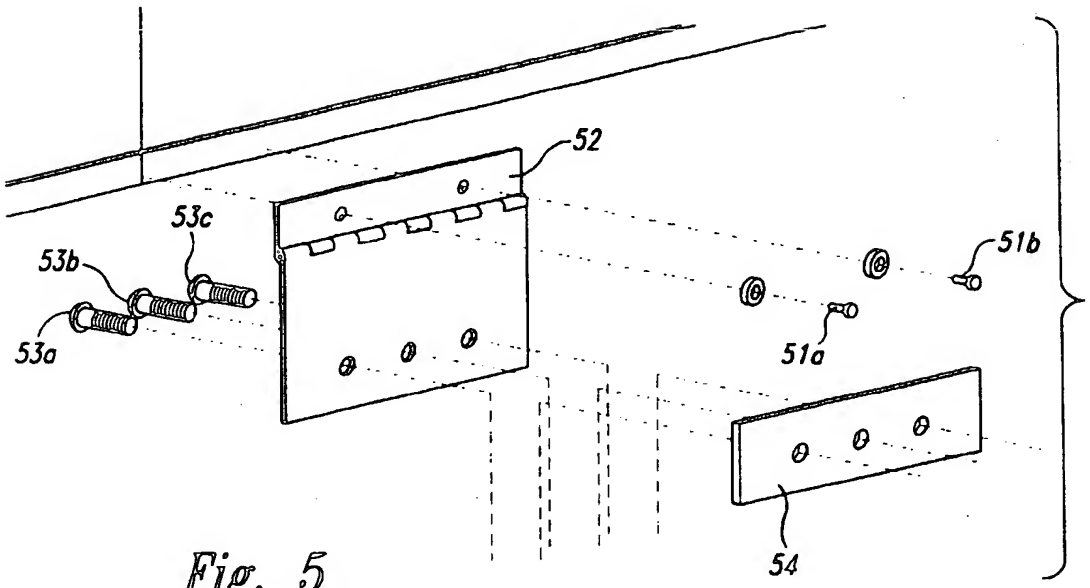

Fig. 5

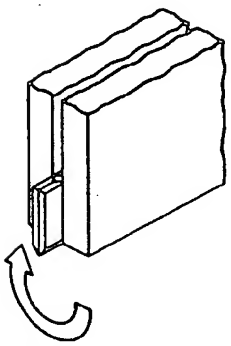

Fig. 6A

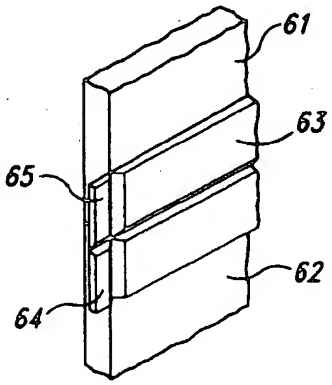

Fig. 6B

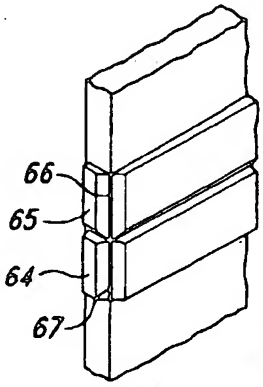

Fig. 6C

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 20 4374

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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13-03-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4597549 A	01-07-1986	NONE	
DE 29803805 U	16-04-1998	NONE	
DE 3917206 C	17-05-1990	NONE	
DE 4208438 A	23-09-1993	US 5322244 A	21-06-1994

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